

## **REMARKS**

Applicants resubmit the May 9, 2006 amendment pursuant to the Examiner's July 24, 2006 office communication requesting that applicants reply to the Examiner's objection to the abstract. Applicants' May 9, 2006 amendment had inadvertently omitted a reply to the abstract objection cited in the May 4, 2005 office action. Applicants submit herein the contents of the May 9, 2006 amendment in its entirety along with applicants' added reply to the abstract objections.

Applicants appreciate the thoroughness with which the Examiner has examined the above-identified application. Reconsideration is requested in view of the amendments above and the remarks below.

Applicant respectfully requests that the foregoing amendment be entered. In the November 9, 2005 office communication, the Examiner found the November 4, 2005 amendment to be non-compliant for the following reasons:

- a) each claim has not been provided with a proper status identifier, and as such, the individual status of each claim cannot be identified;
- b) the claims are not presented on a separate page;
- c) the remarks are not separated on a separate page; and
- d) claim 25 is mentioned twice; once amended and then cancelled.

Applicant addresses each of these comments herein. Applicant provides argument to each rejection set forth by the Examiner.

### **Abstract Objections**

In the May 4, 2005 office action, the Examiner had objected to the abstract for improper language and format. Applicants concur, and submit herewith a new abstract for entry.

### **Objection to Claims 1-8**

The Examiner has objected to claims 1- 8 for the following reasons:

"Claims 1-8 are objected to because of the following informalities: in claim 1 the Markush group is improper, i.e., it should include the phrase "selected from the group" before the word 'comprising.' Appropriate correction is required."

Claim 1 has been amended to include "selected from the group *consisting of*" to properly reflect a Markush grouping. This language has also been incorporated into new claim 41.

### **Rejections under 35 U.S.C. § 102**

The Examiner has rejected claims 1, 4-8, 11-13 and 20-25 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent Nos. 4,904,343 ('343) or 5,565,727 ('727) issued to Giglia, et al., or U.S. Patent No. 4,929,502 ('502) issued to Giglia, or EP 145849 A1 ('849) issued to Giglia (hereinafter, "Giglia").

Giglia teaches an integrated paper comprising fibrillated fibers and a particle immobilized therein. Refer, Giglia abstract. Giglia teaches that the paper can be formed using a wet lay technique, resulting in a novel absorbent fabric having a caliper between of at least 0.005 inch, high absorptive capacity to weigh ratio, and high porosity to fluid flow. Giglia, '727, col. 3, ll.19-25; '343, col. 3, ll.20-26; '502, col. 6, ll.38-44; '849, p.4,

ll.1-14. Giglia also teaches that the paper can be used to make filters or combined with another filter surface, e.g., a carbon block. Giglia, '727, col. 4, ll.2-11; '343, col. 4, ll.3-11; '502, col. 7, ll.14-22; '849, p.4 (third paragraph). Giglia teaches the same type of fibers as claimed and the same particles including the size of such particles. Giglia, '727, col. 2, ll.53-57; '343, col. 2, ll.54-58; '502, col. 6, ll.33-37; '849, p.3 (third paragraph). Giglia teaches the use of particles either to adsorb toxic gases or control microorganisms, and teaches the use of activated carbon particles as the preferred particles.

Even though Giglia does not teach the pore size of the paper as claimed, this property seems to be inherent to the paper taught by the reference, since they are made using the same process and using the same raw materials as claimed, or at least the minor modification to obtain the pore size in the range as claimed would have been obvious to one of ordinary skill in the art as an optimization of a result effective variable. Note that it has been held that "[T]he discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." In re Antoine, 559 F.2d 618, 195 USPQ 6 (C.C.P.A. 1977); In re Aller, 220 F.2d 454, 105 USPQ 233 (C.C.P.A. 1995).

### **Rejections under 35 U.S.C. § 103**

The Examiner has rejected claims 1, 4-8, 11-13 and 20-25 under 35 U.S.C. § 103(a) as being obvious over U.S. Patent Nos. 4,904,343 ('343) or 5,565,727 ('727) issued to Giglia, et al., or U.S. Patent No. 4,929,502 ('502) issued to Giglia, or EP 145849 A1 ('849) issued to Giglia (hereinafter, "Giglia").

The Examiner has summarized the factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. § 103(a) as follows:

- 1) determining the scope and contents of the prior art;
- 2) ascertaining the differences between the prior art and the claims at issue;
- 3) resolving the level of ordinary skill in the pertinent art; and
- 4) considering objective evidence present in the application indicating obviousness or nonobviousness.

The Examiner has further stated that the application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103(a) prior art, the Examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later unnecessary. In re Fout, 675 F.2d 297, 213 USPQ 532 (C.C.P.A. 1982); In re Siebentritt, 372 F.2d 566, 152 USPQ 618 (C.C.P.A. 1967). "

#### **Applicant's Remarks In Response To The Grounds for Rejection**

The Examiner has rejected claims 1-25 for the aforementioned grounds over the following references:

<u>Patentee</u>	<u>Number</u>	<u>Referenced As</u>
Giglia et al.	4,904,343	'727
Giglia	4,929,502	'502
Giglia	EP 145849	'849

Before discussing the above prior art references, the clarification of the microbiological interception enhancing agent of claims 8, 15, 21, 23, and 24, and new claim 41 is discussed so as to characterized the clarification of the term in the claims. The instant invention claims priority on several applications which claim the microbiological interception enhancing agent set forth at pages 13 to 17 and in 10/286,695 which is now issued as U.S. Patent No. 6,835,311, and which is fully incorporated by reference. Specification, p.17, ll.11-13. Claims 8, 15, 21, 23, 24, and 41 have been amended consistent with the disclosure in the instant application to include, in pertinent part: "and includes a microbiological interception enhancing agent comprising a cationic material having a counter ion associated therewith when exposed to an aqueous biologically active metal salt solution, forming the colloidal metal precipitate that precipitates onto at least a portion of the surface of at least some nanofibers and/or said agent." The prior art cited by the Examiner has not disclosed any integrated paper with the use of the novel microbiological interception enhancing agent set forth in claims 8, 15, 21, 23, 24 and 41, and such is not obvious over the prior art. The instant application discusses the benefits of bring able to remove microbiological contaminants. Further, it is axiomatic that a novel microbiological interception enhancing component will enhance the stability and life of cellulosic papers, such as those generated with fibrillated Lyocell. Moreover, the use of the microbiological interception enhancing agent in an integrated paper with the additional active agents set forth in the claims is not taught or obvious over the three (3) Giglia references cited by the Examiner. Accordingly, it is respectfully submitted that claims 8, 15, 21, 23, 24 and 41 are allowable over the prior art cited by the Examiner.

The Examiner has carefully set forth the grounds for rejection over the three (3) Giglia patents under 35 U.S.C. §§ 102 and 103, as set forth in the Official Action dated May 4, 2005, and as similarly set forth above from the Official Action. The Examiner has characterized the fibers of the Giglia references as being of the size set forth in the instant claims. It is respectfully submitted that only the carbon particles are in the correct size range, since Giglia discloses that no more than 15% of the carbon fiber can be less than 1 micron, and no more than about 15% of the carbon fiber be over 100 micron. This does not permit an average diameter in Giglia as set forth in claim 1 of the instant application of less than 1000 nm. Giglia, '727, col. 3, ll.10-15.

In addition the Examiner's attention is drawn to claim 7 where the relationship of the fibers and particles is defined to have an asymmetric structure by the different settling velocities. Giglia fails to teach this type of asymmetric structure for an integrated paper. Examining claims 1 and 4 of the instant application, where dramatically different diameters of fibers and particles are claimed, further supports this. In claim 1 the fibers have a diameter of less than 1000 nm (1000 nm equals one (1) micron) and in claim 4 the particles have an average particle size of about 1 micron to about 5000 microns.

The three (3) Giglia prior art references are also limited to the use of carbon fibers and carbon particles and do not address the use of nanofibers as claimed in the instant application. Nor do the prior art references address active agents selected from the group consisting of metals, metal salts, metal oxides, alumina, silicates, ceramics, zeolites, diatomaceous earth, activated bauxite, fuller's earth, calcium sulfate, titanium dioxide,

magnesia, magnesium hydroxide, magnesium oxide, manganese oxides, iron oxides, perlite, talc, clay, bone char, calcium hydroxide, calcium salts, or combinations thereof.

Claims 1-24 remain in this application and have been amended to distinguish over the patents cited by the Examiner, as discussed above. Claims 25-40 have been cancelled. New claims 41-43 have been added to specifically claim the integrated paper with the microbiological interception enhancing agent comprising a cationic material having a counter ion associated therewith when exposed to an aqueous biologically active metal salt solution, forming the colloidal metal precipitate that precipitates onto at least a portion of the surface of at least some nanofibers and/or active agents.

It is respectfully submitted that the application has now been brought into a condition where allowance of the entire case is proper. Reconsideration and issuance of a notice of allowance are respectfully solicited.

Respectfully submitted,



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**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service on the date indicated below as first class mail in an envelope addressed to Mail Stop \_\_\_\_\_, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Name: Carol M. Thomas Date: August 24, 2006 Signature: 